

23. A force sensor for sensing a touch force applied to a touch surface, the force sensor comprising:

a first element including an elastic element and a first capacitor plate including a first capacitive surface, the elastic element and the first capacitive surface being substantially coplanar;

a second element including a second capacitor plate;

wherein transmission of at least part of the touch force through the elastic element contributes to a change in capacitance between the first capacitor plate and the second capacitor plate.

24. The force sensor of claim 23, wherein the first capacitor plate and the elastic element are integral.

25. The force sensor of claim 23, wherein the elastic element is produced by forming an elevated feature into the first capacitor plate.

26. The force sensor of claim 23, wherein the first and second capacitor plates are separated by a volume, the ratio of the height of the volume to the volume's greatest breadth being less than 0.05.

27. A force sensor for sensing a touch force applied to a touch surface, the force sensor comprising:

a first element including an elastic element, a first capacitor plate including a first capacitive surface, force-receiving means for receiving at least part of the touch force into the first element, force-transmitting means for transmitting at least part of the touch force to structures not including the first element;

a second element including a second capacitor plate; and

wherein transmission of at least part of the touch force through the elastic element contributes to a change in capacitance between the first capacitor plate and the second capacitor plate; and

wherein the smallest rectangular parallelepiped that encloses the first capacitive surface, the elastic element, and the second capacitor plate has a greatest dimension that is at least five times its least dimension.

28. The force sensor of claim 27, wherein the elastic element comprises the force-receiving means.

29. The force sensor of claim 27, wherein the elastic element and the first capacitor plate are integral.

30. The force sensor of claim 27, wherein the second element comprises a planar support surface that includes a plurality of electrically conductive mechanical bearing contacts;

wherein the second capacitor plate includes a second capacitive surface that is coplanar with the plurality of mechanical bearing contacts; and

wherein at least portions of the first capacitor plate are in contact with the plurality of mechanical bearing contacts to transmit force thereto.

31. The force sensor of claim 30, wherein the planar support surface is part of an interconnect system to transmit a signal developed in response to the change in capacitance between the first capacitor plate and the second capacitor plate.

32. A force sensor for sensing a touch force applied to a touch surface, the force sensor comprising:

a first element including a first capacitor plate including a first capacitive surface;

a second element including a second capacitor plate having a second capacitive surface, at least a portion of the first element being in contact with at least one support region of the second element to transmit force thereto, the second capacitive surface being substantially coplanar with the at least one support region; and

wherein transmission of at least part of the touch force to the first element contributes to a change in capacitance between the first capacitor plate and the second capacitor plate.

33. The force sensor of claim 32, wherein the at least one support region is part of an interconnect system to transmit a signal developed in response to the change in capacitance between the first capacitor plate and the second capacitor plate.

34. A force sensor for sensing a touch force applied to a touch surface, the force sensor comprising:

a first element including a first capacitor plate including a first capacitive surface;

a second element including a second capacitor plate, the second element being part of an interconnect system to transmit a signal developed in response to the change in capacitance between the first capacitor plate and the second capacitor plate, at least a portion of the first element being in contact with at least one support region of the second element to transmit force thereto;

wherein transmission of at least part of the touch force to the first element contributes to a change in capacitance between the first capacitor plate and the second capacitor plate.

35. The force sensor of claim 34, wherein the second capacitive surface and the at least one support surface are integral.

36. A force sensor for sensing a touch force applied to a touch surface, the force sensor comprising:

a first element including a first capacitor plate including a first capacitive surface;

a second element including a second capacitor plate separated by a capacitive gap from the first capacitor plate, the length of the mechanical path defining the capacitive gap being no greater than four times the maximum dimension of the volume of the capacitive gap;

wherein transmission of at least part of the touch force to the first element contributes to a change in capacitance between the first capacitor plate and the second capacitor plate.

37. The force sensor of claim 36, wherein the second capacitor plate is separated from the first capacitor plate in the unloaded state of the force sensor by not more than 10 mils.

38. A force sensor for sensing a touch force applied to a touch surface, the force sensor comprising:

a first element including a first capacitor plate including a first capacitive surface;